	A	В	С	D	Е	F	G	Н
1		,	Appendix	B: Emissions Calculations				
2				Summary of Modification				
3								
4		Compa	ny Name:	MGPI of Indiana, LLC				
5			Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025				
6	Significant Source	Modifica	tion No.:	029-35496-00005				
7	Significant Permit	Modifica	tion No.:	029-35505-00005				
8		F	Reviewer:	Kristen Willoughby				
9			Date:	12/22/2014				
10						************		
11		· · · · · · · · · · · · · · · · · · ·	<u>Ur</u>	ncontrolled Potential to Emit (tons/yr)				,
12	Emission Unit	PM	PM10	PM2.5 *	SO ₂	NOx	voc	СО
13	One (1) DDG Dryer, identifed as EU-39	418.77	418.77	418.77	18.84	27.86	418.77	464.28
14	Wet Pad (EU-40)	-	-	-	-	-	0.89	-
	2 Screw Conveyors, 1 Drag Conveyor, 3							
15	Product Conveyors, 1 K-Valve	2.55	1.42	0.24	-	-	-	-
16	Total	421.32	420.19	419.01	18.84	27.86	419.66	464.28
17	* PM2.5 listed is direct PM2.5						,	

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1 2	
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7	
8	
9	
10	
11	
12	Total HAPs
13	39.36
14	0.04
15	-
16	39.40
17	

	АВ	С	D	E	F	G	Н			J	K
1	·	Appendi	B: Emissions Calculations	'		- -		•			
2			Summary of Emissions								
2											
3											
4	Compa	any Name:	MGPI of Indiana, LLC								
5		Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025								
6	Significant Source Modific	ation No.:	029-35496-00005								
7	Significant Permit Modific	ation No.:	029-35505-00005								
8		Paviowar.	Kristen Willoughby								
9		Date	: 12/22/14								
10									_		
11	Duran (Paris and Harry	Dista	Emissions (ton/yr)	1000	N.C	1400		0110	_		
12	Process/Emission Unit PM	PM10	PM2.5	SO2	NOx	VOC	СО	GHG	-		
13 14			PTE (New Units)								
15	DDG Dryer (EU-39) 8.38	8.38	8.38	18.84	27.86	8.38	46.43	27,473			
16	Wet Pad (EU-40) -	-	-	-	-	0.89	-				
17	PTE 8.38	8.38	8.38	18.84	27.86	9.27	46.43	27,473			
18	Actual to	Potential (DDG Cooler and Transport System EU-32)								
19								·			
	Baseline 0.00	0.00	0.00		<u> </u>	0.00	<u> </u>	-	_		
	PTE 7.91	5.01	2.01	-	-	9.16	 -	-	4		
22	Emissions Increase (ATPA) 7.91	5.01	2.01		<u> </u>	9.16		_	-		
23 24	A	ctual to Pro	iected Actual (EU-32 Rotary Dryers)								
	Baseline 21.45	21.45	21.45	Т.	Τ-	635.51	Τ.	T _	\dashv		
	Projected Actuals 19.85		19.85	-	 -	587.94		-	1		
27	Emissions Increase (ATPA) <0	<0	<0	-	-	<0	 -	-			
28			Hybrid Test	•							
29			-								
	Total PTE New Units 8.38	8.38	8.38	18.84	27.86	9.27	46.43	27,473	_		
	Total Emissions Increase from ATPA 7.91	5.01	2.01	-	-	9.16	10.40	-			
32 33	Hybrid Test Emissions Increase 16.29 PSD Significant Threshold 25	13.38	10.39	18.84 40	27.86 40	18.42 40	100	27472.8 75,000			
34	F3D Significant Tiffeshold 25	15	10	40	40	40	100	75,000			
35	PM2.5 Net Emissions (ton/yr)	7									
	Hybrid Test increase 10.39	i									
37	Contemporaneous Netting										
	EU-32 Rotary Dryers - Baseline 21.45										
	EU-32 Rotary Dryers - Projected Actuals 19.85										
	Contenporanous Decrease - EU-32 Rotary Dryers -1.61	4									
41	AA 029-32386-00005 (issued 12/17/12) - add 3 boilers	-									
	3 Boilers - Baseline 0.00 3 Boilers - Projected Actual (PTE) 0.41	-									
	Contemperaneous Increases from 3 Boilers 0.41	1									
45	Renewal T029-32119-00005 (issued 06/20/14) - remove 3	1									
	3 Boilers - Baseline (PTE) 0.41	1									
	3 Boilers - PTE 0.00										
	Projected Decrease from 3 Boilers -0.41										
49	Emissions Increase 8.78	4									
50	PSD Significant Threshold 10	J									
51	Nata Basallas antata (# BBC C)										
	Note: Baseline emissions for the DDG Cooler and Transport S	•	· · · ·	-							
	MGPI's production is bottlenecked at the existing stills which a	-								-: 4iou	onv
	Pursuant to 326 IAC 2-2(e)(3), the baseline emissions for a ne-	w emission	s unit alter initial construction shall be equal to the PTE	rursua	iiii 10 32	0 IAC 2-	∠(l)(T),	a new em	แรรเดก	o uiiit is	any
၂၁	emissions unit that has exisited less than 2 years.										

	AB	С	D	l E	F	G	Т	T 8	I V	I 1 I 8	мΙ	N I	0	PQ
1	A B	1 0			<u> </u>	Appendix B:		l' Calculations	J K		VI	IN		r j Q
2							DDG Dryer (E							
3								-						
4					Con	mpany Name:	MGPI of Indi	iana, LLC						
5						Address:	7 Ridge Ave	nue, Lawrencebur	g, Indiana 4702	5				
6				Signific	cant Source Mod	dification No :	029-35496-0	0005						
				•										
7				Signif	icant Permit Mod	affication No.:	029-35505-0	10005						
8						Reviewer:	Kristen Willo	oughby						
9						Date:	12/22/2014							
10														
			Hourly	Annual	Heat Content	Fuel Usage	1							
11	Cor	nbustion Source	MMBtu/hr	MMBtu/yr	(Btu/scf)	(MMcf/yr)								
12	Direct-fired Dryer He	at Input Capacity ^(a)	45	394,200	1,020	386.47								
13		at Input Capacity ^(a)	8	70,080	1,020	68.71]							
14	Total	Heat Input Capacity	53	464,280	o constant	455.18								
15		Janetina o			 1									
16 17	Proceeding District	duction Capacity	ton/hr 9.56	83,754										
18		Dead.cotic n(b)	3.50	03,734	j									
- <u>-</u>			Dallidani	Control	1									
19			Pollutant	Efficiency										
20	Control Efficiency For		HAPs	97%										
21 22	(% Remo	val) ^(c)	VOC CO	98% 90%										
23			PM/PM ₁₀ /PM _{2.5}	98%										
24			1 red0. 1812.5	L 5570	1									
25	***************************************	Pollutant	NOx	00000000000000000000000000000000000000	CC)	T	SO ₂	VOC	PM	Т	PM ₁₀		PM _{2.5}
26	Emissions From DD0		0.12		2.0			0.45	10.0	10.0		10.0		10.0
07	Drying (EU-39)	Uncontrolled	lbs/MMI	3tu	lbs/M/	MBtu	lbs	/ton DDG	lbs/ton DDG	lbs/ton DD	G III	bs/ton D	DG	lbs/ton DDG
27 28		Emission Factor Units	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr tpy	lbs/hr t	py Ib	s/hr	tpy	lbs/hr tpy
29	Uncontroll		6.36	27.86	106.00	464.28	4.30	18.84	95.61 418.77	*				95.61 418.77
30	Controlle	d PTE	-	-	10.60	46.43	-	-	1.91 8.38	1.91 8.	38 1	1.91	8.38	1.91 8.38
31	***************************************		p0000000000000000000000000000000000000		·		*			IT-1-IIIAD (C				
			Acetalde	hvda	Formald	lahuda	l ,	Acrolein	Methanol	Total HAP (fi Natural Ga	.			
32	HAP Emissions From	Pollutant	Acetaide	ilyuc	1 Omnaio	ienyue	1	ACIOICIII	Welliano	Combustio	\	Total H		
33	DDG Drying (EU-39)	Uncontrolled	0.5		0.3	31		0.01	0.11	See Below		Emission	ıs ^(e)	
34		Emission	lbs/ton D		lbs/ton	1	*	ton DDGS	lbs/ton DDGS	ļ				
35	Lincontrolled DTC	Units	lbs/hr	tpy 20.04	lbs/hr	tpy	lbs/hr	tpy	lbs/hr tpy			os/hr	tpy	
	Uncontrolled PTE Controlled PTE		4.78 0.14	20.94 0.63	2.96 0.09	12.98 0.39	0.10 0.00	0.42 0.01	1.05 4.61 0.03 0.14	0.09 0. 2.82E-03 0.		3.99 0.27	39.36 1.18	
38	CONTROL IL		U.17	0.00	. 0.00	0.00	0.00	1 0.01	0.00 0.14	Z.OZE - 00 0.	<u>.</u>		1.10	
39					ombustion HAPs	s - Organics								
			Benzene	Dichlorobenze	Formaldehyde	Hexane	Toluene	Total - Organics						
40		ANA of		ne										
	Emicolan Eastania II- /	MIVICI	2.1E-03	1.2E-03	Included Above	1.8E+00	3.4E-03							
	Emission Factor in lb/l		L	 	7,0000			<u> </u>						
42	Emission Factor in lb/f					4.097E-01	7.738E-04	4.112E-01						
42 43 44	Emission Factor in lb/f Potential Emission in t	ons/yr	4.779E-04	2.731E-04		4.03712-01	1							
42 43 44 45		ons/yr	4.779E-04	2.731E-04		4.09712-01								
42 43 44 45 46		ons/yr	4.779E-04		Combustion HAP									
42 43 44 45		ons/yr	4.779E-04 Lead		Combustion HAF		Nickel	Total - Metals						
42 43 44 45 46 47 48 49						es - Metals	Nickel 2.1E-03	Total - Metals						
42 43 44 45 46 47 48 49 50	Potential Emission in t		Lead	Cadmium	Chromium	Ps - Metals Manganese	1	Total - Metals						
42 43 44 45 46 47 48 49 50	Potential Emission in t	ЛМсб	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Ps - Metals Manganese 3.8E-04	2.1E-03							
42 43 44 45 46 47 48 49 50 51	Potential Emission in t	ЛМсб	Lead	Cadmium	Chromium	Ps - Metals Manganese	1	Total - Metals						
42 43 44 45 46 47 48 49 50	Potential Emission in t	ЛМсб	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Ps - Metals Manganese 3.8E-04	2.1E-03							

5 Notes: [В	С	D		E	F	G	Н	· ·	T	J	K	L	1	Λ	Ν	1 0	Р	Т
	Design heat inp	uts of direct f	ired dryer and of t	thermal	oxidizer provi	ded by the manuf	acturer (ICM, I		-	I									
(a) I	Maximum short	-term distiller	s dry grain (DDG)) produc	tion rate taker	n from facility info	rmation. Capa	city of propose	d system v	vill be equ	iivalent t	o comb	oined c	apacity	of the	existing	steam-	tube	
,	dryers (portion	of existing EL	J-32). Material ba	alance is	as follows:														
6 (b)					(lb/br)	%solids													
7 (b)			Dava	r food	(lb/hr)		-												
9 0 1			•	er feed	35,508	35.5%													
<u>-</u>			Water / Evapo		21,508	0% 90%													
귀	Annual anaratia	na aaaima th	DDG Prod		14,000		h, throughout t	haa.											
2 .	•		at the proposed d factors and cyclor	•	•	• •	, ,	•	(ICM Inc.)	٨٥٥١١٣٥		1 ami	ooiono	0.00	in ralant	Lindor	the De	4 70	
	•		factors and therm			,	,		, ,			. •		,					
	Methodology:	eu emission	iaciois and incimi	iai Uziuiz	zer control em	ciencies provided	i by the manura	icturer (icivi, iri	.). LIIIISS	ion racioi	s iui spe	CITIC I	AFSIII	ciuue D	oui piot	css cii	113310113	•	
	NOx and CO:																		
싉 ''';		ΓΕ (lb/br) = [] [[]	Incontrolled Emiss	sion Fac	otor (Ib/MMARti	ı) v Design Firing	Pata (MMRtu/h	ar\1											
		. , -	Uncontrolled Emis		•	,	•	/ -	\nl										
	SO2:	L ((01/y1) - [Officontrolled Little	133101111	actor (ID/IVIIVID	itu) X Design i init	y itale (iviivible	1/y1) / 2,000 lb/t	/iij										
計 :		re (lb/br) = [[Incontrolled Emiss	sion Fac	etar (lh/tan DD	(C) v Production E	Pate (ton/hr)]												
		. , -	Uncontrolled Emis		•	•	. ,-	2 000 lb/ton1											
	VOC, PM/PM1		Oncontrolled Link	133101111	actor (ib/tori b	DG) XT TOUGCHOT	intale (lolly)	2,000 10/10/1]											
	•		Incontrolled Emiss	sion Fac	ctor (lb/ton DD	(C) v Production F	Pate (ton/hr)]												
2		. , .	Uncontrolled Emis		•	•	. /-	2 000 lb/ton1											
 			controlled Emissio					2,000 ib/(01)											
]		. , -	ncontrolled Emissio		. , .														
	HAPs (lb/ton er			ion ivale	e (toll/yl) X (1-	Control Emidiency	7)]												
}	•		<i>).</i> Incontrolled Emiss	sion Fac	ctor (lh/ton DD	G) v Production F	Pate (ton/hr)]												
			Uncontrolled Emis			•		2 000 lb/ton1											
			controlled Emissio		•	*		2,000 10/10/1]											
		. , -	ncontrolled Emissi		. , .														
	HAPs (lb/MMcf				((0.13.) // (1		/1												
	•		P 42, Chapter 1.4	4. Table:	s 1.4-1. 1.4-2.	1.4-3. SCC #1-0	2-006-02, 1-01	-006-02. 1-03-0	06-02. and	1-03-00	5-03								
			put (MMCF/yr) x					,	,,										
4	•	,			`	, .													
	e Gas Calculat	ions																	
5 Greenhous																			
5 Greenhouse																			
6				0	anharras Cas		1												
6 7			000	Gree	enhouse Gas	N2O]												
6 7 8			CO2		CH4	N2O													
7 3 Emission Fa	actor in lb/MMc		CO2 120,000			N2O 2.2													
6 7 8 9 Emission Fa			1		CH4	L													
6 7 8 9 Emission Fa 0	actor in lb/MMc	f	120,000		CH4 2.3	2.2													
6 7 8 9 Emission Fa 0 1 2 Potential En		f	1		CH4	L													
6 7 8 9 Emission Fa 0 1 2 Potential En 3	actor in lb/MMc	f	120,000		CH4 2.3	2.2													
6 7 8 9 Emission Fa 0 1 2 Potential En 3	actor in lb/MMc	f yr	120,000		CH4 2.3 0.52	2.2													
6 7 8 9 Emission Fa 0 1 1 2 Potential En 3 4 5 Summed Po	actor in lb/MMc	f yr	120,000		CH4 2.3	2.2													
6 7 8 9 Emission Fa 0 1 2 Potential En 3 4 5 Summed Po	actor in lb/MMc	f yr	120,000		CH4 2.3 0.52	2.2													
6 7 8 9 Emission Fa 0 1 2 Potential En 3 4 5 Summed Po 6 7	actor in lb/MMc nission in tons/y	f yr	120,000		CH4 2.3 0.52 27,312	2.2													
6 7 8 9 Emission Fa 0 1 2 Potential En 3 4 5 Summed Po 6 7 8 CO2e Total	actor in lb/MMc nission in tons/y	f yr	120,000		CH4 2.3 0.52	2.2													
6 7 8 9 Emission Fa 1 2 Potential En 3 4 5 Summed Po 6 7 8 CO2e Total 9	actor in lb/MMc nission in tons/y	f yr	120,000		CH4 2.3 0.52 27,312	2.2													
6 7 8 9 Emission Fa 9 1 2 Potential En 3 4 5 Summed Po 6 7 8 CO2e Total 9 9 00	nission in tons/yotential Emission in tons/yr	f yr	120,000		CH4 2.3 0.52 27,312	2.2													
6 7 8 9 Emission Fa 0 1 2 Potential Em 3 4 5 Summed Po 6 6 7 8 CO2e Total 9 00 Methodolog	actor in lb/MMc mission in tons/y otential Emissio in tons/yr	f yr ons in tons/yr	27,311		CH4 2.3 0.52 27,312 27,473	0.50	ic 0.64												
6 7 8 9 Emission Fa 0 1 2 Potential Em 3 4 5 Summed Po 6 6 7 8 CO2e Total 9 00 Methodolog The N2O Er	actor in lb/MMcd nission in tons/y otential Emission in tons/yr	f yr ons in tons/yr for uncontrolle	120,000 27,311 ed is 2.2. The N2	2O Emis	2.3 0.52 27,312 27,473	0.50													
6 7 8 9 Emission Fa 0 1 1 2 Potential Em 3 4 5 Summed Po 6 7 8 CO2e Total 9 00 Methodolog The N2O Er 203 Emission Fa	nission in tons/yotential Emission in tons/yr in tons/yr mission Factor actors are from	f yr ons in tons/yr for uncontrolle AP 42, Table	120,000 27,311 ed is 2.2. The N2 1.4-2 SCC #1-02	20 Emis 2-006-02	27,312 27,473 esion Factor for 2, 1-01-006-02	0.50 or low NOx burner 2, 1-03-006-02, ar													
6 7 8 9 Emission Fa 0 1 1 2 Potential Em 3 4 5 Summed Po 6 7 8 CO2e Total 9 00 1 Methodolog The N2O Er Emission Fa 04 Global Warr	actor in lb/MMcanission in tons/y in tons/yr in tons/yr mission Factor actors are from ming Potentials	for uncontrolled AP 42, Table (GWP) from	120,000 27,311 ed is 2.2. The N2	20 Emis 2-006-02 CFR Par	CH4 2.3 0.52 27,312 27,473 ssion Factor fo 2, 1-01-006-02	0.50 or low NOx burner 2, 1-03-006-02, ar													

	A B	CD	E	F	G	Н	I	J	K	L	М	N	0	Р	Q
1	***************************************				Appendix	B: Emissions Calculations				······································					
2						Wet Pad (EU-40)									
3															
4				Compa	ny Name:	MGPI of Indiana, LLC									
5					Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025									
6		Significa	ınt Sourc	e Modifica	ation No.:	029-35496-00005									
7		Signific	ant Perm	it Modifica	ation No.:	029-35505-00005									
8				F	Reviewer:	Kristen Willoughby									
9					Date:	: 12/22/2014									
10				ANTEANAN											
10			8	ontrollea Emission		0.0083	0.0	001	0.0	0002	0.0	002	0.0	0004	Tota
	Emission Unit	Emission Point ^(a)		Emission		0.0083 lb/ton wet cake	Ιυ/ιυ	ii AACr		0002 wet cake	ID/LU	II AACT		0004	Tota Emis
11	Emission Unit	Emission Point ^(a)		8				ii AACr	lb/ton		ID/LU		ID/LU		Tota Emis
11 12	Emission Unit		Dryer	Emission Factors ^(b)	(lb/hr)	lb/ton wet cake	Acetaid	ıı we. lenyae)	lb/ton Acre	wet cake	ID/LU FOIMâl	n wei denyae a)	Meth	anol ^(d)	Emis
11 12 13	Emission Unit EU-40	Emission Point ^(a) Wet Cake Production, Storage, and Loadout	Dryer (ton/hr)	Emission Factors ^(b) Feed ^(c)	(lb/hr) 0.20	lb/ton wet cake VOC ^(d)	Acetaic	ii wet leftyde) (ton/yr)	lb/ton Acro (lb/hr)	wet cake olein ^(d)	(lb/hr)	n wei denyae a)	Meth	anol ^(d)	Emis (lb/hr)

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11	I HAP
12	sions
13	
14	(ton/yr)
15	0.0387
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19 20	
19 20 21	
19 20 21 22 23	

	А	В	С	D	E	F	G	Н	I J	K	L	M	N O
1	•	<u> </u>	900.		Appendix B	: Emissions Calculations							
2 3 4 5 6 7 8 9			D	DG Cooler and Transport System Projected Emission Estimates (EU-32) Comp Significant Source Modifi Significant Permit Modifi	Address: cation No.: cation No.: Reviewer:								
11	Emission Unit	Emission Point	t Do	escription	Stack ID	Uncontrolled PM Emission Factor	Uncontrolled PM ₁₀ Emission Factor	PM _{2.5} Emission Factor	DDG throughput	PM En	ate	Rate	sion PM _{2.5} E
12						(lb/ton)	(lb/ton)	(lb/ton)	(ton/hr) (ton/yr	/ (lb/hr)	(ton/yr)	<u> (lb/hr) (to</u>	n/yr) (lb/hr)
13	EU-32	4 Screw Conveyors, 2 Conveyors, 3 Prod Conveyors, 1 K-Va	uct G	rain Conveying	S-310	0.061	0.034	0.0058	9.56 83,754	0.58	2.55	0.33 1	.42 0.06
14		Drum Cooler	G	rain Conveying	NA	0.061	0.034	0.0058		0.58	2.55	0.33 1	.42 0.06
15									Totals	1.17	5.11	0.65 2	.85 0.11
16	Emission Unit	Emission Point	t De	escription	Stack ID	Controlled PM Emission Factor	Controlled PM ₁₀ Emission Factor	Controlled PM _{2.5} Emission Factor	DDG throughput	·	olled PM ion Rate	Controll PM₁₀ Emis Rate	ed Cont sion PM _{2.5} E
18						(lb/ton)	(lb/ton)	(lb/ton)	(ton/hr) (ton/yr	(lb/hr)	(ton/yr)	(lb/hr) (to	n/yr) (lb/hr)
19	EU-32	Hammer Mill	Н	ammer Milling ^(b)	S-310	0.067	0.052	0.036	9.56 83,754	0.64	2.81	0.49 2	.16 0.35
20									Totals	0.64	2.81	0.49 2	.16 0.35
21 22 23 24	` '	Factors taken from AP-4: As recommended by AP-	,	on, Volume 1, Section 9.9.1 (Grain Elevators and Processes). x B.2, Table B.2.2 for Category 7 - "Grain Processing" on Page 17, the particle size dis	stribution for F	PM_{10} is 61% of Total PM and for $PM_{2.5}$ is 23% of Total PM $^\circ$	for uncontrolled (emissions. Addit	tionally, AP-42 Apper	ndix B.2, 7	Гable В.2.	3 "Typical	
25 26		-	vt%	Collection Efficiency	Wt	wt%							
26			23%	80%	0.046	54%							
27			88%	95%	0.019	22%							
28 29	-	PM ₁₀ and higher 3	39% 1	95%	0.0195 0.0845	23%							
			0	verall control:	91.6%								
30 31 32 33 34 35 36 37 38 39 40		Uncontrolled PTE (ton/yr) Controlled PTE Hammerr Controlled PTE Hammerr Uncontrolled PTE PM2.5 Uncontrolled PTE PM/PM Uncontrolled PTE PM2.5	= [Uncontrol) = [Uncontrol mill (lb/hr) = [mill (ton/yr) = Hammermil //10 Hamme Hammermil	lled Emission Factor (lb/ton DDG) x Production Rate (ton/hr)] olled Emission Factor (lb/ton DDG) x Production Rate (ton/yr) / 2,000 lb/ton] [Controlled Emission Factor (lb/ton DDG) x Production Rate (ton/hr)] = [Controlled Emission Factor (lb/ton DDG) x Production Rate (ton/yr) / 2,000 lb/ton] Il (lb/hr) = Controlled PTE Hammermill (lb/hr) / (1 - 80%) rmill (lb/hr) = Controlled PTE Hammermill (lb/hr) / (1 - 95%) Il (ton/yr) = Controlled PTE Hammermill (ton/yr) / (1 - 80%) rmill (ton/yr) = Controlled PTE Hammermill (ton/yr) / (1 - 95%)									

	Λ		T	D		F			T	T .			BA T NI	
41	A	В	С	U	E	F	G	п	<u> </u>	J	K	느	M N	
						Uncontrolled Emission	Λ ′	219	0.0	16	0.00	1022	0.010	0.0
42 43	Emission					Factors ^(a)	Ib/tor		lbs/tor		8	n DDG	lbs/ton DDG	lbs/to
44	Unit	Emissio	n Point	Description		DDG throughput		OC .	Acetalo		Acro	:0000000000000000000000000000000000000	Formaldehyde	000000000000000000000000000000000000000
45	Oiiii				(ton/hr)	(ton/yr)	(lb/hr)	(ton/yr)					(lb/hr) (ton/yr)	
46		Drum 0	Cooler	Cooling Drum Apparatus	((0))	(com ji)	(10/111)	(comj.)			(1.2.11.)	(0111)	<u> </u>	
47		Existing Scre	w Conveyor	Grain Conveying										
48	EU-32	New 3 Screw Co Conveyors, Conveyors,	3 Product 1 K-Valve	Grain Conveying	9.56	83,754	2.09	9.16	0.16	0.69	0.0031	0.014	0.10 0.43	0.034
49		Existing Ham Cycl		Hammer Milling										
50	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000		00000000000000000000000000000000000000		000000000000000000000000000000000000000	<u>\$000000000000000000000000000000000000</u>	**************************************	00000000000000000000000000000000000000	Recessores	00000000000000000000000000000000000000	10111111111111111111111111111111111111	
	Methodology													
52	` '		ctor for DDG cod	oling taken from a similar operation permitted in Indiana under Permit #T169-3119	91-00068 (POET Bior	efining - North Manchester). HAP emission factors are de	erived as a perc	entage of the VC	DC emission	n factor pre	esented, a	assuming	that individual H	APs are
53	(b)	Methodology:	h.,) - DDO Th	salara di (dang (lan) VI DDO O a aliang Engine aliang farabang (lla (dang)										
54				ughput (ton/hr) X DDG Cooling Emission factor (lb/ton) pughput (ton/yr) X DDG Cooling Emission factor (lb/ton) x ton/2,000 lb										
56		Emission rate (to	ryr) – DDG TIIR	bugnput (torryr) A DDG Cooling Emission factor (lb/ton) x torr/2,000 lb										
52 53 54 55 56 57		Dryer emissions												
58				tpy from Drying	% of VOC									
59			VOC	8.38										
60			Acetaldehyde		7.50%									
61			Acrolein		0.15%									
62			Formaldehyde		4.65%									
63		***************************************	Methanol	0.14	1.65%									
58 59 60 61 62 63 64 65 66 67 68		011												
65		Other DDG Coole												
67		POET Biorefining		lb VOC/hr	Enama luma 00	204 tooting at DOET Diagofining Javall (IA)								
60				ton DDG/hr	From June 20	004 testing at POET-Biorefining Jewell (IA)								
60				lb VOC / ton DDG										
09			0.210000040	IN VOC / IOIT DDG										

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···	Р	Q	R	S	Т	U	V
1	-				<u> </u>		
2							
3							
4							
5							
6							
7							
8							
9							
10				·			
	ntrolled mission ate	Controll Emission		PM ₁₀ E	rolled mission ate	PM _{2.5} E	rolled mission ate
12	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
13	0.24	0.09	0.38	0.05	0.21	0.01	0.04
14	0.24	0.58	2.55	0.33	1.42	0.06	0.24
15	0.49	0.67	2.94	0.37	1.64	0.06	0.28
16							
17	rolled mission ate	Uncontro Emissio		PM₁0 E	ntrolled mission ate	PM _{2.5} E	ntrolled mission ate
1/							,
18	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
	(ton/yr) 1.53	(lb/hr) 12.81	(ton/yr) 56.12	(lb/hr) 9.86	(ton/yr) 43.17	(Ib/hr) 1.74	7.64
18 19 20							
18 19	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26	1.53	12.81	56.12	9.86	43.17	1.74	7.64
19 20 21 22 23 24 25 26 27	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 20 21 22 23 24 25 26 27 28 29	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28 29	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28 29 30 31	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28 29 31 32 33 34 35 36 37	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38	1.53	12.81	56.12	9.86	43.17	1.74	7.64
18 19 20 21 22 23 24 25 26 27 28 29 31 32 33 34 35 36 37	1.53	12.81	56.12	9.86	43.17	1.74	7.64

	Р	Q	R	S	T	U	V
41							
	036		IAD				
43	n DDG	Total I Emiss					
	nanol	EIIIISS	10115				
45	(ton/yr)	(lb/hr)	(ton/yr)				
46							
47	0.15	0.292	1.28				
48	0.10	0.202	1.20				
49	***************************************	000000000000000000000000000000000000000	000000000000000000000000000000000000000				
50							
51	1 1 1 1						
	emitted in	the same pr	oportion				
53 54							
55							
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63							
64 65							
66							
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69							_

	D	Е	F
1		Appendix B: Emissions Calculations	
2		EU-32 Rotary Dryer Baseline Emissions	
3			
4	Company Name:	MGPI of Indiana, LLC	
5	Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025	
6	nt Source Modification No.:	029-35496-00005	
7	nt Permit Modification No.:	029-35505-00005	
8	Reviewer:	Kristen Willoughby	
9	Date:	12/22/2014	

	A	B C	D	E	F			
	EU-32 Rotary Dryers							
12								
13	PM, PM ₁₀ , PM _{2.5} Emissions							
	Constituent	Dryer Feed Rate ^(a)	Controlled Emission Factor ^(b)	Controlled Emissions ^(c) (ton/yr)				
14		(ton/yr)	(lb/ton)	(10111)				
15	PM		0.27	21.45				
16	PM10	158,894	0.27	21.45				
17	PM2.5		0.27	21.45				
18								
19	Notes:							
	(a) Feed (wet cake) into existing steam tube dryer system is taken from facility records as the average over the 24-month period from January							
20								
21	(b) Controlled emission Factor from AP-42, Table 9.9.7-1. The emission estimation methodology used matches that provided in the IDEM							
22 23	(c) Methodology:							
23	Controlled Emissions (ton/yr) = Usage (ton/yr) x EF (lb/ton) / 2,000 lb/ton							
24	PM2.5 emissions conservatively assumed to be equal to PM10 emissions.							
25								
26	VOC Emissions							
		Water		VOC from Dryers				
	Dryer Feed Rate (ton/	/yr) Content ^(b)	VOC Content of Water ^(b) (lb VOC/lb water)	(ton/yr)				
27		(% by wt)	(ib VOC/ib water)	(toll/yl)				
28	158,894	66.66%	0.006	635.51]			
29					_			
30	Notes:							
31	(a)	(a) Feed (wet cake) into existing steam tube dryer system is taken from facility records as the average over the the 24-month period from						
32	(b)							
33	(c) Methodology and Sample Calculations:							
34	VOC (ton/yr) = Dryer Feed Rate (ton/yr) x Water Content of Feed (% by wt) x (lb VOC/lb water)							

	D	E	F		
1	Appendix B: Emissions Calculations				
2	EU-32 Rotary Dryer Projected Actual Emissions				
3					
4	Company Name:	MGPI of Indiana, LLC			
5	Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025			
6	ce Modification No.:	029-35496-00005			
7	nit Modification No.:	029-35505-00005			
8	Reviewer:	Kristen Willoughby			
9	Date:	12/22/2014			

	······		·				
	A B	C	D	E	<u> </u>	G	
	EU-32 Steam Tube Rotary Dryers						
12							
13	PM, PM ₁₀ , PM _{2.5} Emissions						
		Dryer Feed Rate ^(a)	Controlled Emission	Controlled Emissions ^(c)		Uncon	
	Constituent		Factor ^(b)	(ton/yr)		Emiss	
14		(ton/yr)	(lb/ton)		***************************************	(tor	
15	PM		0.27	19.8		13	
16	PM10	147,000	0.27	19.8		13	
17	PM2.5		0.27	19.8	***************************************	13	
18							
19	Notes:						
	(a) Feed (we	t cake) into existing stea	am tube dryer system is	based on operation as back-up to the proposed direct-	fired dryer.		
20							
21	` '		AP-42, Table 9.9.7-1. T	he emission estimation methodology used matches tha	ıt provided i	n the IDEM d	
22	(c) Methodol	0.					
23			sage (ton/yr) x EF (lb/to				
24			assumed to be equal to				
25	` '			rol efficiency for controlled emissions.			
26	PM _{2.5} em	issions conservatively a	ssumed to be equal to P	M ₁₀ emissions.			
27							
28							
29	VOC Emissions				_		
		Water Content ^(b) (%	VOC Content of				
	Dryer Feed Rate (ton/hr)	by wt)	Water ^(b) (lb VOC/lb	VOC from Dryers (ton/yr)			
30			water)				
31	147,000	66.66%	0.006	587.9			
32							
	Notes:						
34	(a) Feed (wet cake) into existing steam tube dryer system is based on operation as back-up to the proposed direct-fired dryer.						
35							
36 37	(c) Methodology: VOC (ton/yr) = Dryer Feed Rate (ton/yr) x Water Content of Feed (% by wt) x (lb VOC/lb water)						
38	VOC (tor	/yr) = Dryer Feed Rate	(ton/yr) x vvater Content	of Feed (% by wt) x (ib VOC/ib water)			
	HAP Emissions						
29	HAF EIIISSIVIIS	HAP% ^(a)	HAP from Dryers				
10	НАР	(by wt of VOC)	}				
40			(ton/yr)				
41 42	Acetaldehyde Acrolein	6.18% 0.37%	36.3 2.2				
43	Methanol	1.24%	7.3				
44	Formaldehyde	0.04%	0.2				
45	Total	0.0470	46.0				
46	าบเสา		40.0				
	Notos:						
4/	Notes:						

	А	В	С	D	E	F	G
48	8 (a) HAP composition taken from May 22, 2014 ATSD, Appendix A, Page 8 of 23, for permit T029-32119-00005.						

	Н
11 12 13	
14 15 16 17 18 19	2.3 2.3 2.3
20 21 22 23 24 25 26 27 28 29	ocument
30 31 32 33 34 35 36 37 38 39	
40 41 42 43 44 45 46 47	

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48	